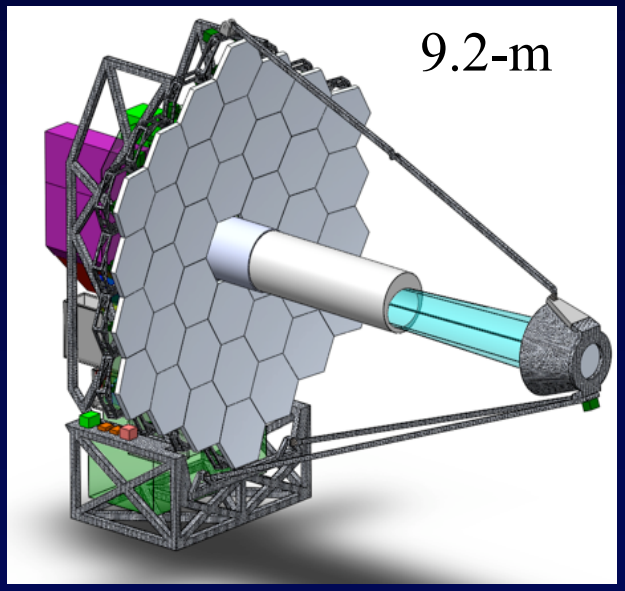
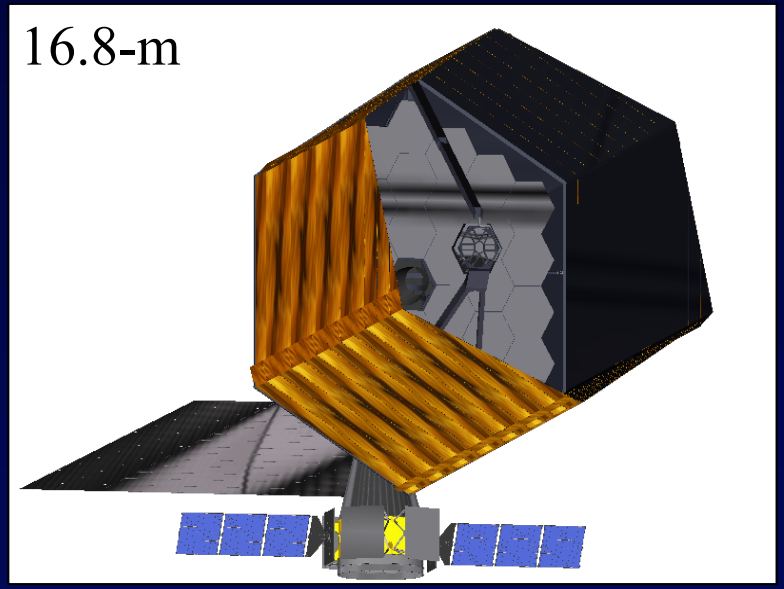
ATLAST 2009:
Advanced Technology Large-Aperture Space Telescope

An International UVOIR Flagship Mission for the 2025 Era

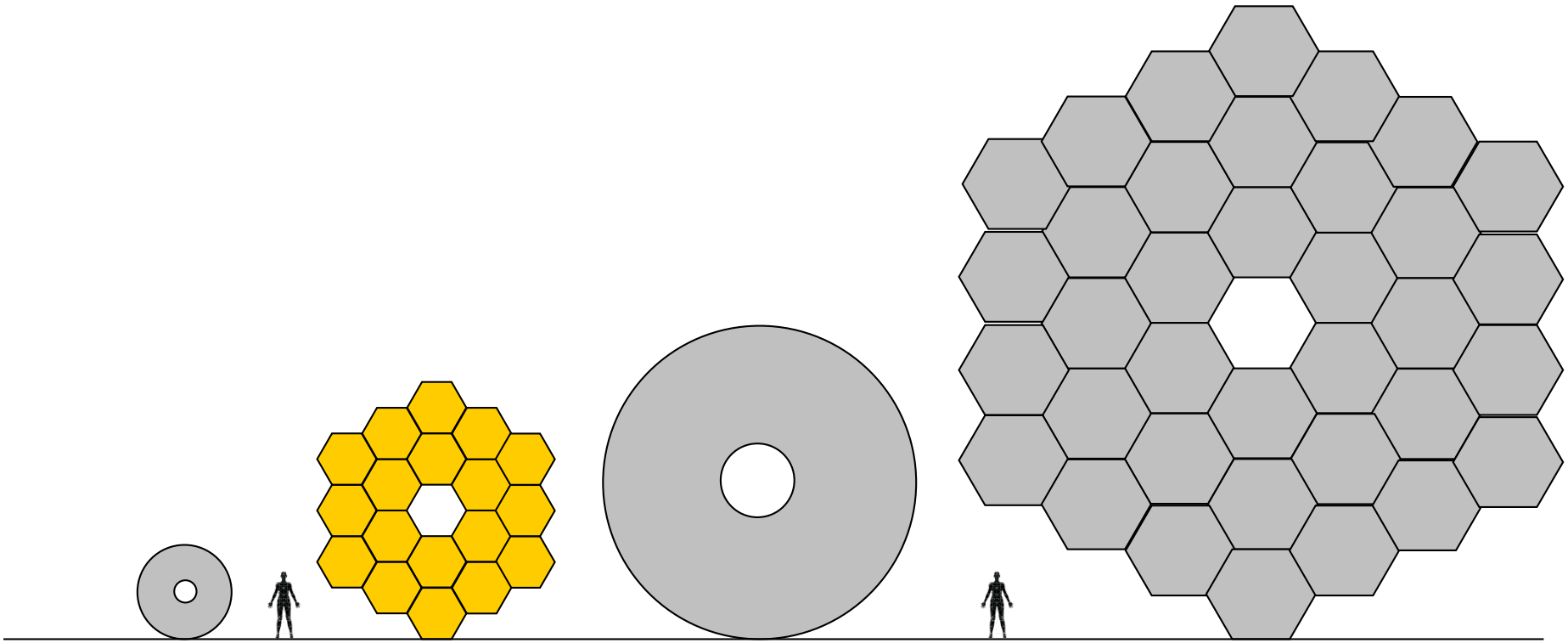




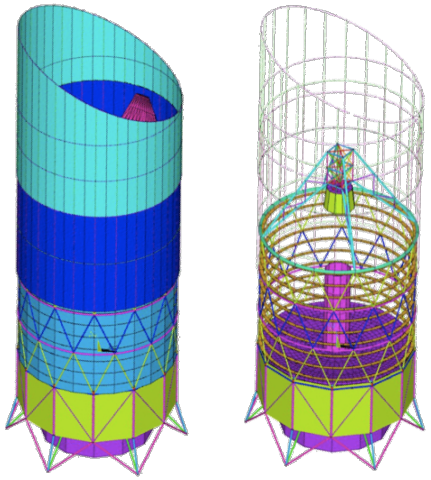
Three different designs were explored (shown above), each one building on heritage from previous and current missions, although also requiring some new technologies.

M. Postman (STScI) & the ATLAST team

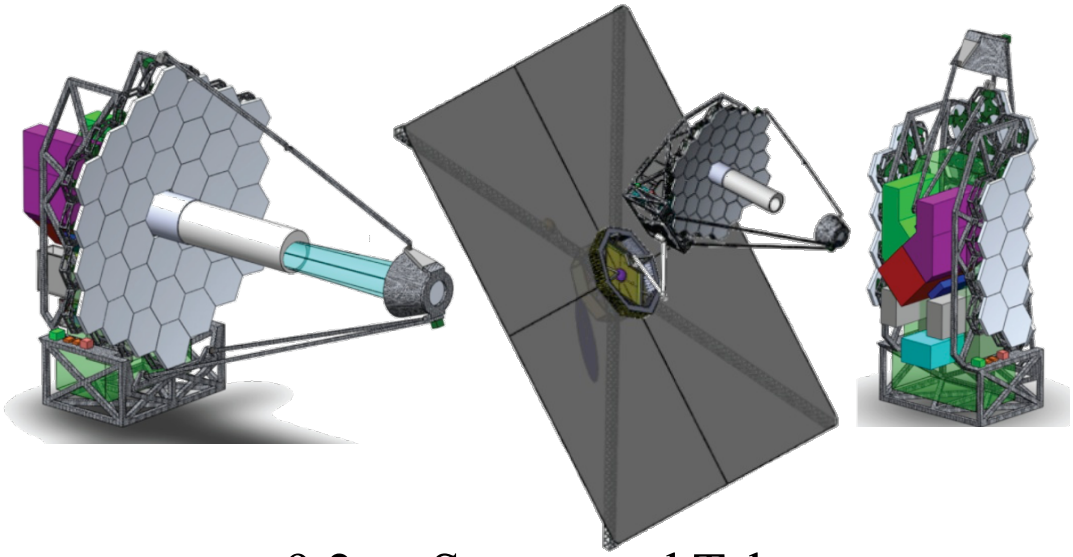
A UV/Optical space telescope with an aperture of at least 8 meters and, for some key problems, closer to 16 meters will be required to achieve ambitious scientific goals.



ATLAST 2009 Concepts

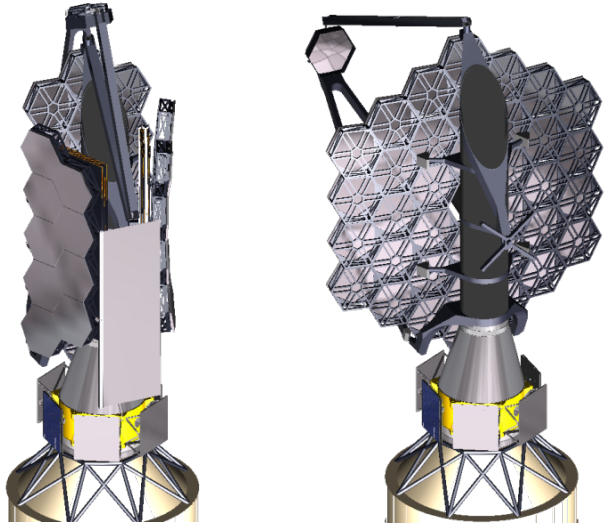


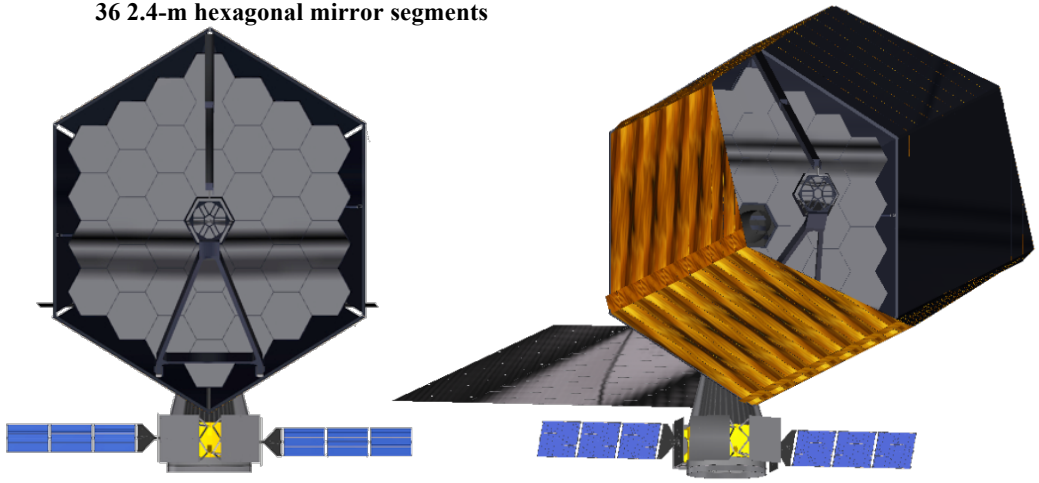
8-m Monolithic Primary
(shown with on-axis SM configuration)



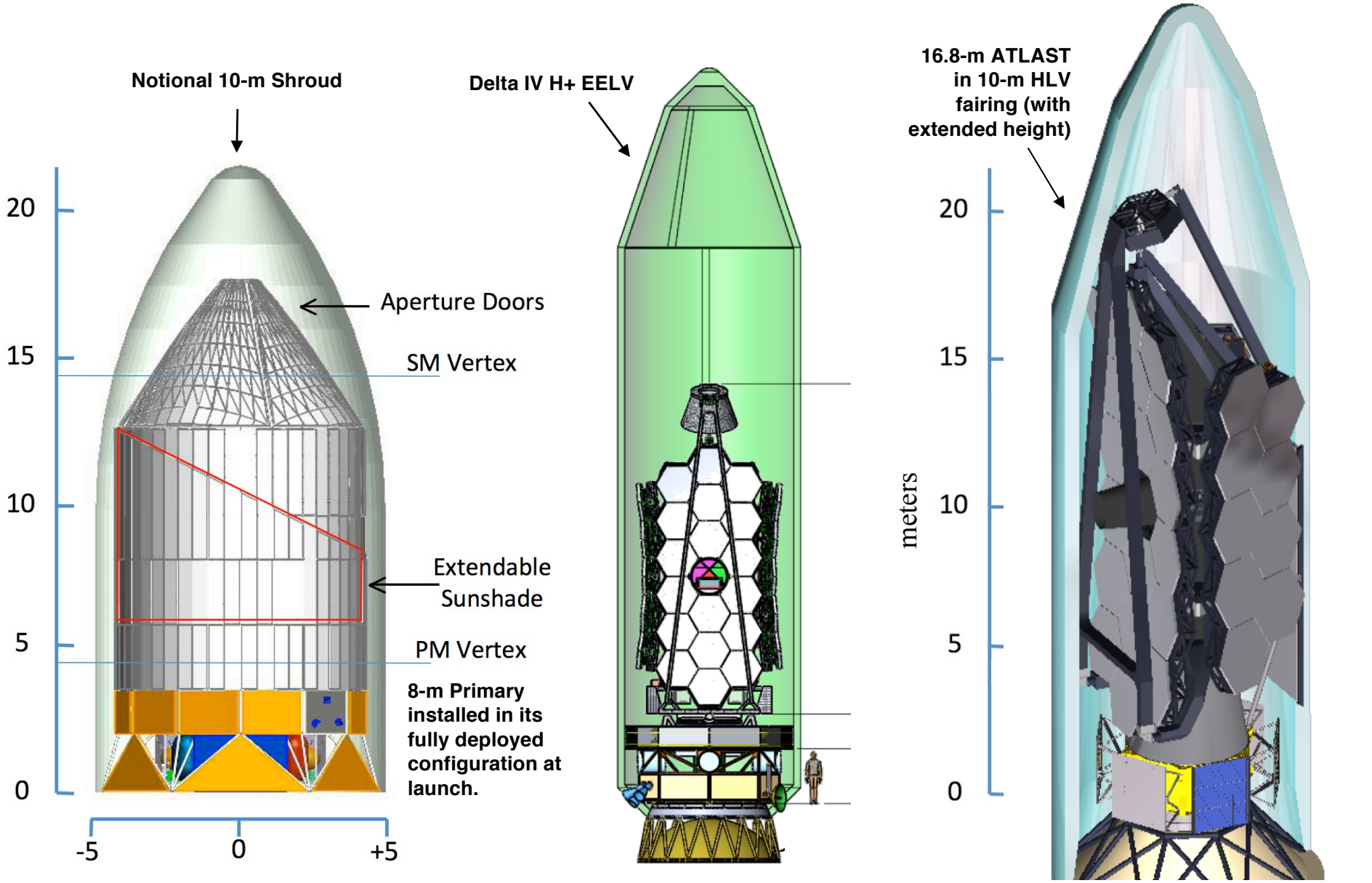
9.2-m Segmented Telescope
36 1.3-m hexagonal mirror segments

16.8-m Segmented Telescope
36 2.4-m hexagonal mirror segments





Heavy Lift Vehicles are Essential for ATLAST 2009

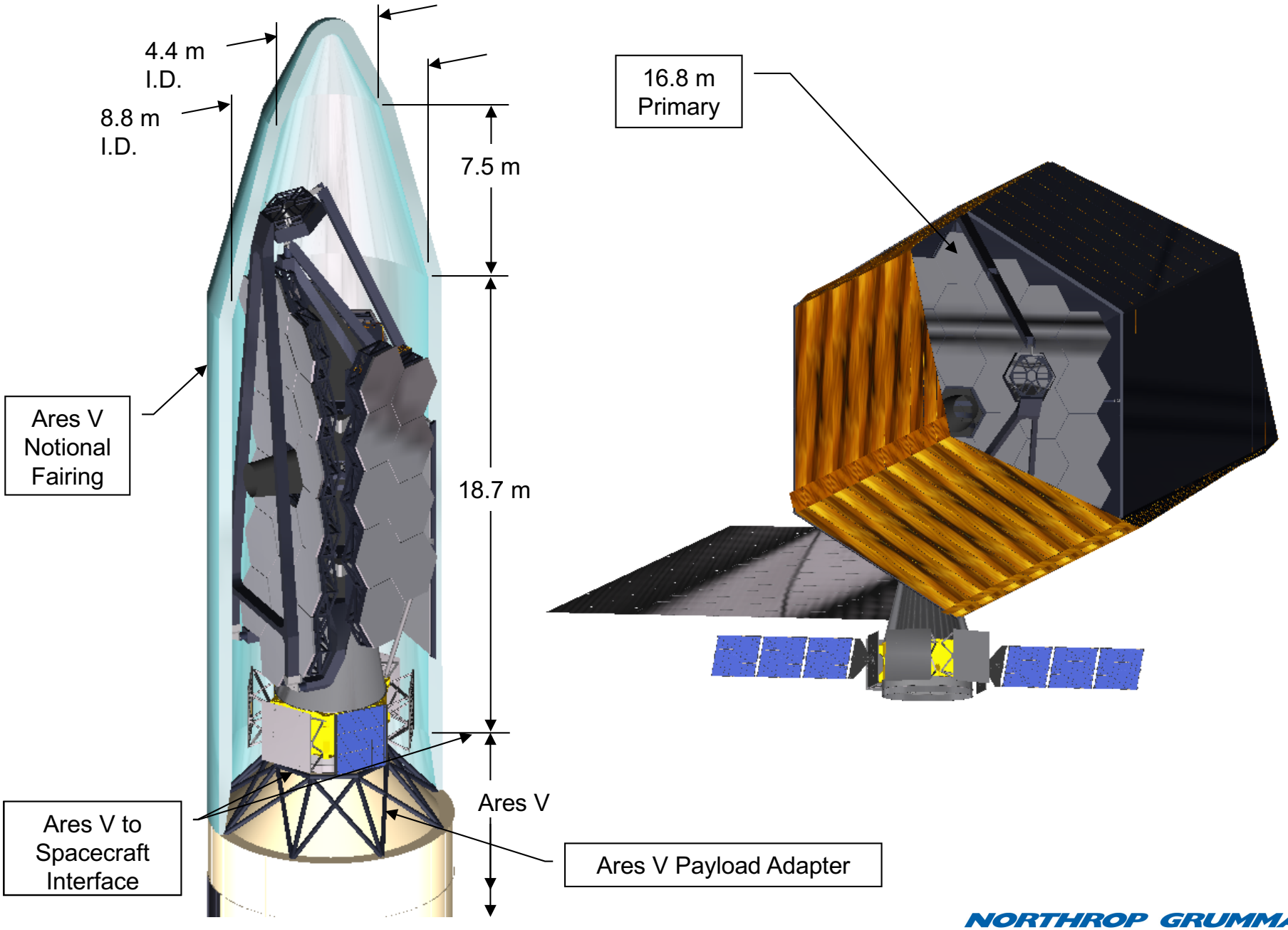


8-m Monolithic Telescope
Observatory dry mass = 44 mT

9.2-m Segmented Telescope
Observatory dry mass = 14 mT

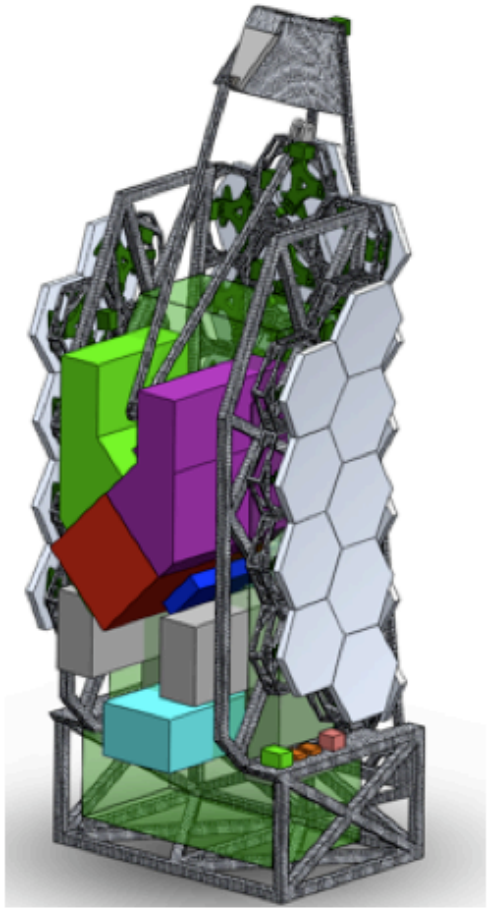
16.8-m Segmented Telescope
Observatory dry mass = ~35 mT

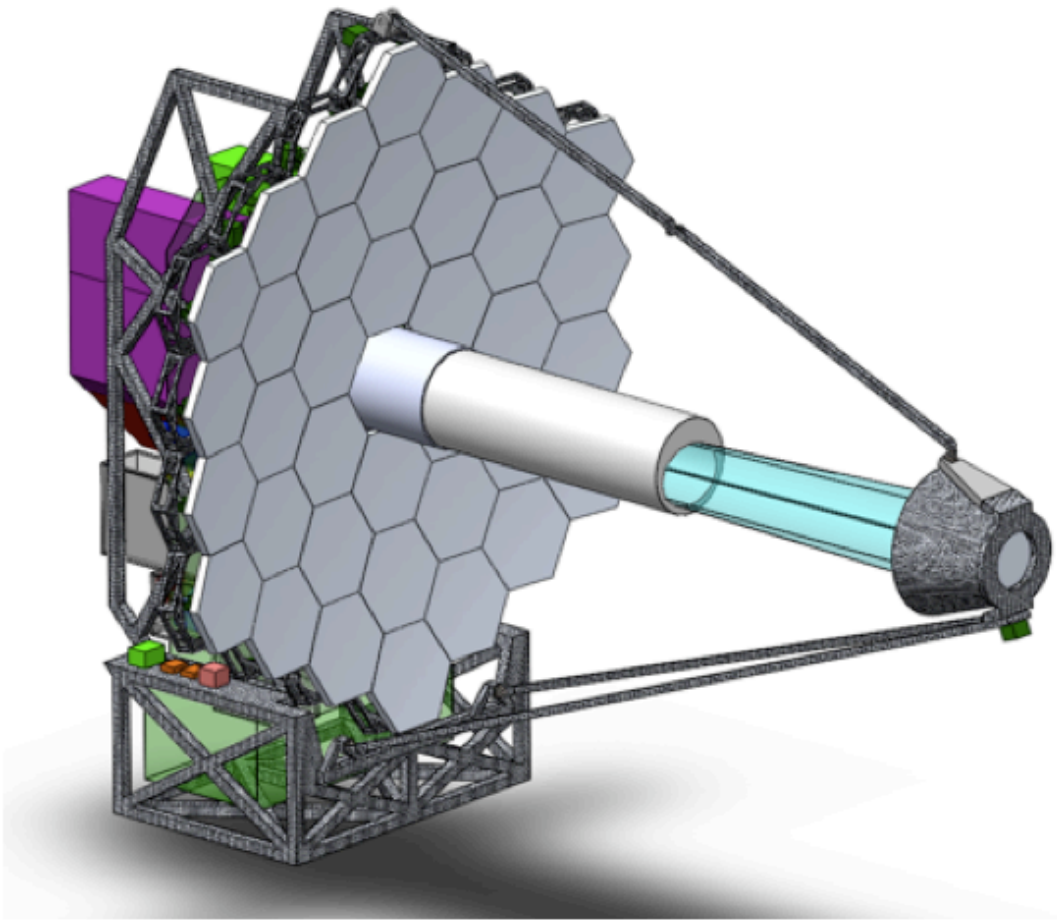
Ares V – 16.8 Meter JWST-Style Chord Fold



NORTHROP GRUMMAN

9.2 m Optical Telescope Assembly (OTA)

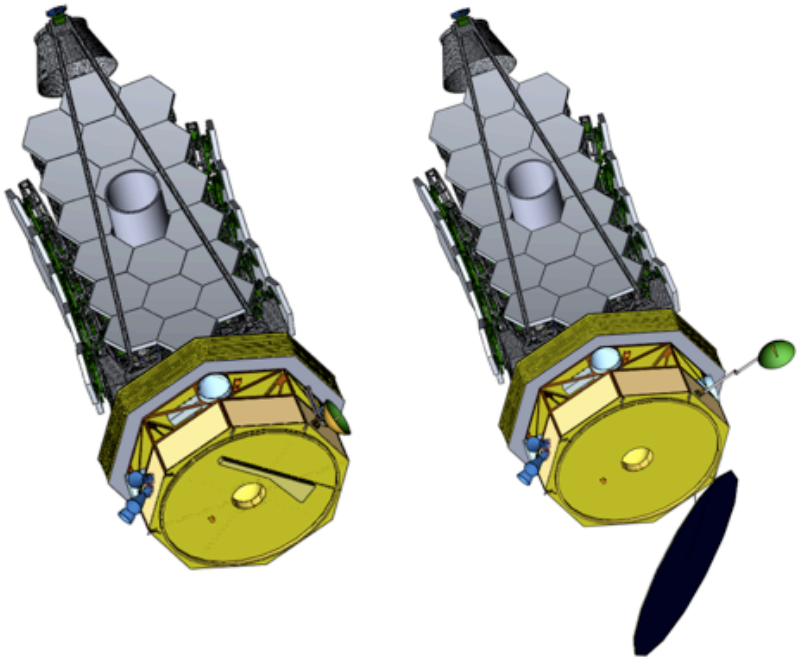




- Open telescope architecture similar to JWST
- 36 segment primary: each segment 1.315 m flat-to-flat ULE glass
- Primary and secondary baffles to control stray light
- Modular instruments in structure behind backplane

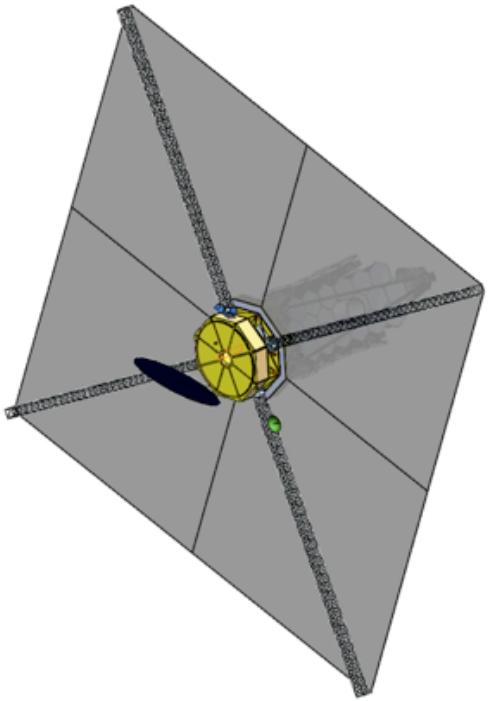
9.2 m Observatory Deployment

Deployment Sequence

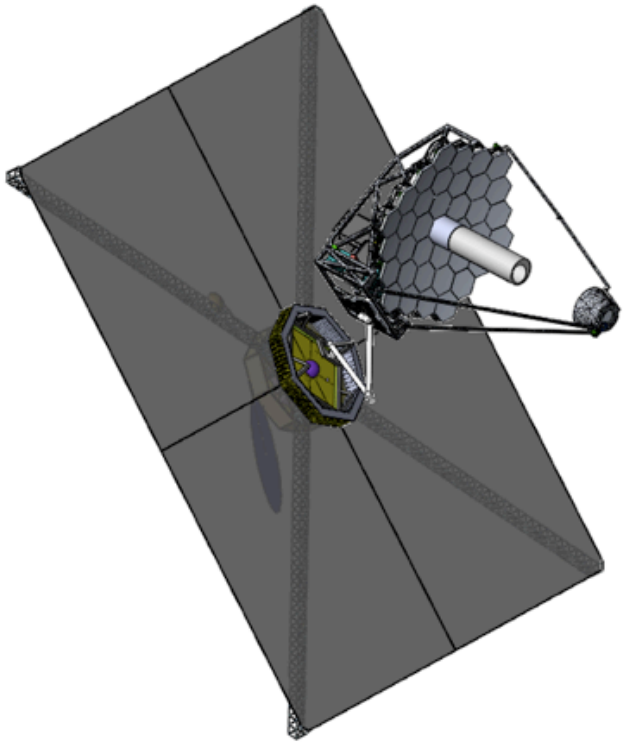


After fairing separation

Deploy solar array and antenna



Sunshield deployed (looking from sun side; S/C bus Visible)



Pointing arm and OTA deployed (dark side of sunshield)